CLAIMS

What is claimed is:

1. A sheet bending brake assembly for securing a work piece, said sheet bending brake assembly comprising:

a clamping member having a lower leg extending therefrom;

a pivoting arm pivotally supported by and extending from said clamping member to define a clamping area with said lower leg;

a guide mechanism reacting between said clamping member and said pivoting arm for moving said pivoting arm between an open position and a closed position;

said guide mechanism having a detent between said open and said clamped positions for providing an intermediate clamping position for adjusting the position of and precisely aligning the work piece.

2. An assembly as set forth in claim 1 wherein said guide mechanism further includes a guide slot having a first end and a second end such that said first end corresponds to said open position and said second end corresponds to said clamped position.

3. An assembly as set forth in claim 2 wherein said detent is positioned within said guide slot between said first and said second ends.

4. As assembly as set forth in claim 3 further including a stop within said guide slot and adjacent said detent for sustaining said intermediate position.

5. An assembly as set forth in claim 4 wherein said guide slot is arcuate.

6. An assembly as set forth in claim 5 wherein said guide slot further includes a long portion and a short portion, said long portion being substantially horizontal and said short portion being substantially vertical.

7. An assembly as set forth in claim 6 wherein said guide mechanism is further defined as a pivot bracket, said pivot bracket having an upper region and a lower region such that said guide slot is disposed between said upper region and said lower region.

8. An assembly as set forth in claim 4 further including a pin supported by said clamping member and disposed in said guide slot such that said guide mechanism rotates about said pin between said first end and said second end.

9. An assembly as set forth in claim 2 wherein said guide mechanism further includes a plurality of detents positioned between said first and said second ends for providing a plurality of intermediate clamping positions for receiving work pieces of varying thickness.

10. An assembly as set forth in claim 9 further including a plurality of stops within said guide slot and adjacent said plurality of detents.

11. An assembly as set forth in claim 4 further including a plurality of clamping members connected to said assembly for engaging differently sized work pieces.

12. An assembly as set forth in claim 11 further including a base supporting said clamping members to provide support to said assembly while moving said pivoting arm between said open and said closed positions.

13. An assembly as set forth in claim 12 further including a handle extending from said guide mechanism for facilitating movement of said pivoting arm between said open and said closed positions.

14. An assembly as set forth in claim 1 further including a bending arm supported by said clamping member for engaging the work piece and bending the work piece to a desired angle.

15. An assembly as set forth in claim 14 further including a bend indicator connected to said bending arm for indicating a degree of rotation of said bending arm during said bending of the work piece.

16. An assembly as set forth in claim 15 further including a lower clamping surface connected to said lower leg and an upper clamping surface connected to said pivoting arm for securing the work piece between said lower and upper surfaces and creating a bending surface for bending the work piece in said clamped position.

17. An assembly as set forth in claim 16 wherein said bend indicator further includes a displacement sensor for measuring said degree of rotation of said bending arm.

18. An assembly as set forth in claim 17 wherein said bend indicator further includes a display device for displaying said degree of rotation of said bending arm.

19. An assembly as set forth in claim 18 wherein said displacement sensor is further defined as a housing supported by said lower leg and a cable extending from said housing and attaching to said bending arm.

20. An assembly as set forth in claim 19 wherein said display device is further defined as a viewing window within said housing and a disc housed within said housing and connected to said cable for moving within said housing to indicate said degree of rotation through said viewing window.

21. An assembly as set forth in claim 20 further including indicia positioned adjacent said viewing window corresponding to said degree of rotation.

22. An assembly as set forth in claim 18 further including a calibration device connected to said cable and said bend indicator for calibrating said bend indicator.

23. An assembly as set forth in claim 1 further including a plurality of clamping members connected to said assembly for engaging work pieces of varying length.

24. An assembly as set forth in claim 23 further including a base supporting said clamping members with said base being collapsible between a transport position and a support position.

25. An assembly as set forth in claim 24 wherein said base further includes a front rail and a rear rail defining a table such that said clamping members are supported by said front rail and said rear rail.

26. An assembly as set forth in claim 25 wherein said table is further defined as having a first table end and a second table end.

27. An assembly as set forth in claim 26 further including a wheel mechanism pivotably connected to one of said table ends and being pivotable between a rolling position and a working position.

28. An assembly as set forth in claim 27 further including a pivot engaging said wheel mechanism and said table for allowing said wheel mechanism to rotate between said rolling position and said working position.

29. An assembly as set forth in claim 28 further including a locking device between said wheel mechanism and said table for locking said wheel mechanism in said rolling position and unlocking said wheel mechanism to allow said wheel mechanism to rotate into said working position.

30. An assembly as set forth in claim 29 wherein said wheel mechanism further includes a wheel brace extending between said front rail and said rear rail and engaging said locking device.

31. An assembly as set forth in claim 30 wherein said wheel mechanism further includes a pair of wheels having a wheel support extending between said wheels and being connected to said wheel brace for transporting said assembly.

32. An assembly as set forth in claim 31 further including a wheel extension connecting said wheel support to said wheel brace such that as said wheel extension pivots, said wheel mechanism extends a predetermined amount below said table to allow for insertion of the work piece within said clamping area.

33. A sheet bending brake assembly for securing a work piece, said sheet bending brake assembly comprising:

a plurality of clamping members;

a base supporting said clamping members with said base being collapsible between a transport position and a support position;

said base having a front rail and a rear rail defining a table such that said clamping members are supported by said front rail and said rear rail;

said table having a first table end and a second table end; and

a wheel mechanism pivotably connected to one of said table ends and being pivotable between a rolling position and a working position for allowing quick and easy transportation of said assembly.

34. An assembly as set forth in claim 33 further including a pivot engaging said wheel mechanism and said table for allowing said wheel mechanism to rotate between said rolling position and said working position.

35. An assembly as set forth in claim 34 further including a locking device between said wheel mechanism and said table for locking said wheel mechanism in said rolling position and unlocking said wheel mechanism to allow said wheel mechanism to rotate into said working position.

36. An assembly as set forth in claim 35 wherein said wheel mechanism further includes a wheel brace extending between said front rail and said rear rail and engaging said locking device.

37. An assembly as set forth in claim 36 wherein said wheel brace has slots for receiving said front rail and said rear rail, each of said slots being U-shaped to allow said locking device to extend therethrough and to secure said wheel mechanism to said front and rear rails.

38. An assembly as set forth in claim 36 wherein said wheel mechanism further includes a pair of wheels having a wheel support extending between said wheels and being connected to said wheel brace for transporting said assembly.

39. An assembly as set forth in claim 38 further including a wheel extension connecting said wheel support to said wheel brace such that as said wheel extension pivots, said wheel mechanism extends a predetermined amount below said table to allow for insertion of the work piece within said clamping area.

40. An assembly as set forth in claim 34 wherein said pivot is further defined as a pin engaging said wheel mechanism and said table.

41. An assembly as set forth in claim 35 wherein said locking device is further defined as a locking pin between said wheel mechanism and said table.

42. An assembly as set forth in claim 33 wherein each of said clamping members have a lower leg extending therefrom and a pivoting arm pivotally supported by and extending from said clamping member to define a clamping area with said lower leg.

43. An assembly as set forth in claim 42 further including a guide mechanism reacting between said clamping member and said pivoting arm for moving said pivoting arm between an open position and a closed position.

44. An assembly as set forth in claim 43 wherein said guide mechanism further includes a detent between said open and said clamped positions for providing an intermediate clamping position for adjusting the position of and precisely aligning the work piece.

45. An assembly as set forth in claim 44 wherein said guide mechanism further includes a guide slot having a first end and a second end such that said first end corresponds to said open position and said second end corresponds to said clamped position.

46. An assembly as set forth in claim 45 wherein said detent is positioned within said guide slot between said first and said second ends.

47. As assembly as set forth in claim 46 further including a stop within said guide slot and adjacent said detent for sustaining said intermediate position.

48. An assembly as set forth in claim 47 wherein said guide mechanism is further defined as a pivot bracket, said pivot bracket having an upper region and a lower region such that said guide slot is disposed between said upper region and said lower region.

49. An assembly as set forth in claim 48 further including a pin supported by said clamping member and disposed in said guide slot such that said guide mechanism rotates about said pin between said first end and said second end.

50. A sheet bending brake assembly for securing a work piece, said sheet bending brake assembly comprising:

a clamping member having a lower leg extending therefrom;

a pivoting arm pivotally supported by and extending from said clamping member to define a clamping area with said lower leg;

a lower clamping surface connected to said lower leg and an upper clamping surface connected to said pivoting arm for securing the work piece between said lower and upper surfaces and creating a bending surface for bending the work piece in said clamped position;

a bending arm supported by said clamping member for engaging the work piece and bending the work piece to a desired angle; and

a bend indicator connected to said bending arm for indicating a degree of rotation of said bending arm during said bending of the work piece.

51. An assembly as set forth in claim 50 wherein said bend indicator further includes a displacement sensor for measuring said degree of rotation of said bending arm.

52. An assembly as set forth in claim 51 wherein said bend indicator further includes a display device for displaying said degree of rotation of said bending arm.

53. An assembly as set forth in claim 52 wherein said displacement sensor is further defined as a housing supported by said lower leg and a cable extending from said housing and attaching to said bending arm.

54. An assembly as set forth in claim 53 wherein said display device is further defined as a viewing window within said housing and a disc housed within said housing and connected to said cable for moving within said housing to indicate said degree of rotation through said viewing window.

55. An assembly as set forth in claim 54 further including indicia positioned adjacent said viewing window corresponding to said degree of rotation.

56. An assembly as set forth in claim 55 further including a calibration device connected to said cable and said bend indicator for calibrating said bend indicator.

57. An assembly as set forth in claim 56 further including a guide mechanism reacting between said clamping member and said pivoting arm for moving said pivoting arm between an open position and a closed position;

58. An assembly as set forth in claim 57 wherein said guide mechanism includes a detent between said open and said clamped positions for providing an intermediate clamping position for adjusting the position of and precisely aligning the work piece.

59. An assembly as set forth in claim 58 wherein said guide mechanism further includes a guide slot having a first end and a second end such that said first end corresponds to said open position and said second end corresponds to said clamped position.

60. An assembly as set forth in claim 59 wherein said detent is positioned within said guide slot between said first and said second ends.

61. As assembly as set forth in claim 60 further including a stop within said guide slot and adjacent said detent for sustaining said intermediate position.

62. An assembly as set forth in claim 61 wherein said guide mechanism is further defined as a pivot bracket, said pivot bracket having an upper region and a lower region such that said guide slot is disposed between said upper region and said lower region.

63. An assembly as set forth in claim 62 further including a pin supported by said clamping member and disposed in said guide slot such that said guide mechanism rotates about said pin between said first end and said second end.